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# BIOS Setup

## Introduction

The purpose of this manual is to describe the settings in the AMI BIOS Setup program on this motherboard. The Setup program allows users to modify the basic system configuration and save these settings to CMOS RAM. The power of CMOS RAM is supplied by a battery so that it retains the Setup information when the power is turned off.

Basic Input-Output System (BIOS) determines what a computer can do without accessing programs from a disk. This system controls most of the input and output devices such as keyboard, mouse, serial ports and disk drives. BIOS activates at the first stage of the booting process, loading and executing the operating system. Some additional features, such as virus and password protection or chipset fine-tuning options are also included in BIOS.

The rest of this manual will to guide you through the options and settings in BIOS Setup.

## Plug and Play Support

This AMI BIOS supports the Plug and Play Version 1.0A specification.

## EPA Green PC Support

This AMI BIOS supports Version 1.03 of the EPA Green PC specification.

## APM Support

This AMI BIOS supports Version 1.1&1.2 of the Advanced Power Management (APM) specification. Power management features are implemented via the System Management Interrupt (SMI). Sleep and Suspend power management modes are supported. Power to the hard disk drives and video monitors can also be managed by this AMI BIOS.

## ACPI Support

AMI ACPI BIOS support Version 1.0/2.0 of Advanced Configuration and Power interface specification (ACPI). It provides ASL code for power management and device configuration capabilities as defined in the ACPI specification, developed by Microsoft, Intel and Toshiba.

## PCI Bus Support

This AMI BIOS also supports Version 2.3 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

## DRAM Support

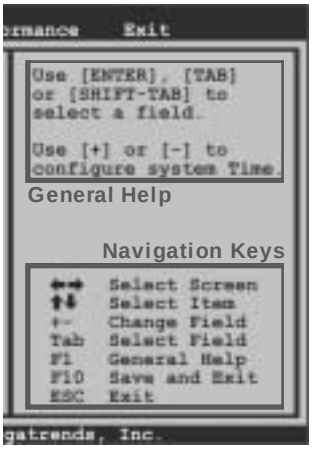
DDR3 SDRAM (Double Data Rate III Synchronous DRAM) is supported.

## Supported CPUs

This AMI BIOS supports the AMD CPU.

## Using Setup

When starting up the computer, press **<Del>** during the **Power-On Self-Test (POST)** to enter the BIOS setup utility.
In the BIOS setup utility, you will see **General Help** description at the top right corner, and this is providing a brief description of the selected item. **Navigation Keys** for that particular menu are at the bottom right corner, and you can use these keys to select item and change the settings.

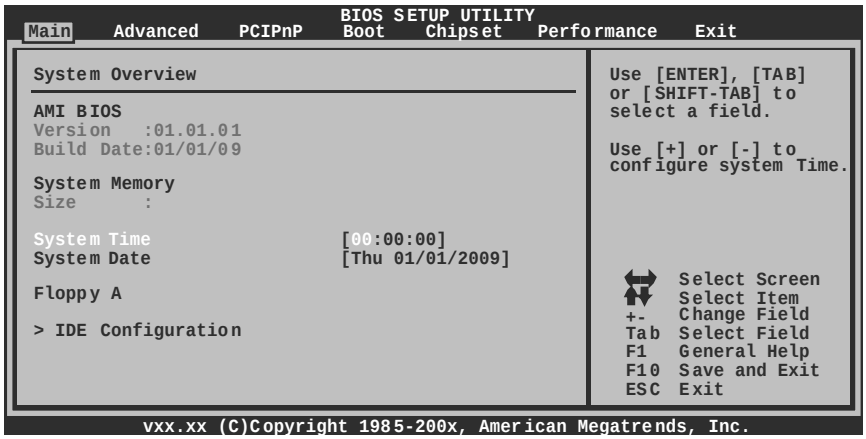



## Notice

- The default BIOS settings apply for most conditions to ensure optimum performance of the motherboard. If the system becomes unstable after changing any settings, please load the default settings to ensure system's compatibility and stability. Use Load Setup Default under the Exit Menu.
- For better system performance, the BIOS firmware is being continuously updated. The BIOS information described in this manual is for your reference only. The actual BIOS information and settings on board may be slightly different from this manual.
- The content of this manual is subject to be changed without notice. We will not be responsible for any mistakes found in this user's manual and any system damage that may be caused by wrong-settings.

# 1 Main Menu

Once you enter AMI BIOS Setup Utility, the Main Menu will appear on the screen providing an overview of the basic system information.




## AMI BIOS

Shows system information including BIOS version and built date.

## System Memory

Shows system memory size, VGA shard memory will be excluded..

## System Time

Set the system internal clock.

## System Date

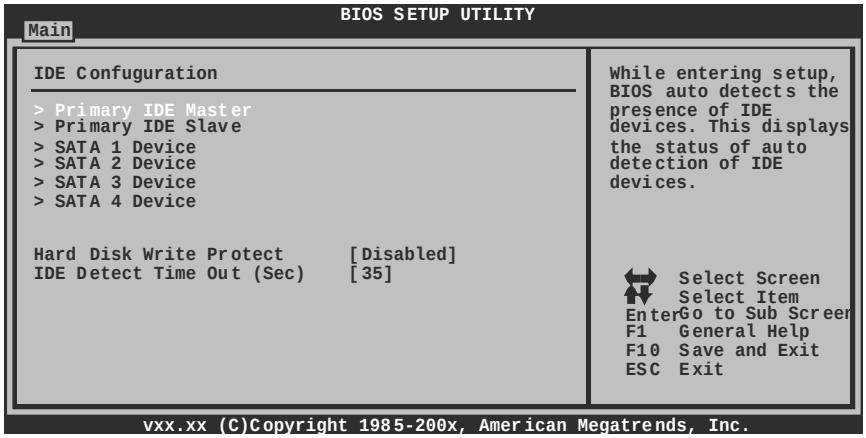
Set the system date. Note that the 'Day' automatically changes when you set the date.

## Floppy A

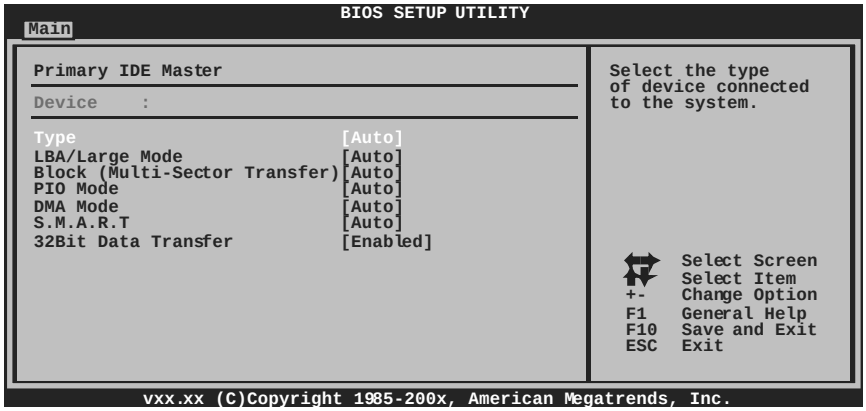
Select the type of floppy disk drive installed in your system.
Options: 360K, 5.25 in / 1.2M, 5.25 in / 720K, 3.5 in / 1.44M, 3.5 in / 2.88M, 3.5 in / None

## IDE Configuration

The BIOS will automatically detect the presence of IDE/SATA devices. There is a sub-menu for each IDE/SATA device. Select a device and press <Enter> to enter the sub-menu of detailed options.


BIOS SETUP UTILITY
Main
IDE Configuration
> Primary IDE Master
> Primary IDE Slave
> SATA 1 Device
> SATA 2 Device
> SATA 3 Device
> SATA 4 Device
Hard Disk Write Protect [Disabled]
IDE Detect Time Out (Sec) [35]
While entering setup, BIOS auto detects the presence of IDE devices. This displays the status of auto detection of IDE devices.
Select Screen
Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit
vxx.xx (C)Copyright 1985-200x, American Megatrends, Inc.

### Primary IDE Master/Slave ; SATA 1/2/3/4 Device




The BIOS detects the information and values of respective devices, and these information and values are shown below to the name of the sub-menu.

***Type***
Select the type of the IDE/SATA drive.
Options: Auto (Default) / CDROM / ARMD / Not Installed

***LBA/Large Mode***
Enable or disable the LBA mode.
Options: Auto (Default) / Disabled

***Block (Multi-Sector Transfer)***
Enable or disable multi-sector transfer.
Options: Auto (Default) / Disabled

***PIO Mode***
Select the PIO mode.
Options: Auto (Default) / 0 / 1 / 2 / 3 / 4

***DMA Mode***
Select the DMA mode.
Options: Auto (Default) / SWDMA0 ~ 2 / MWDMA0 ~ 2 / UDMA0 ~ 5

***S.M.A.R.T***
Set the Smart Monitoring, Analysis, and Reporting Technology.
Options: Auto (Default) / Disabled / Enabled

***32Bit Data Transfer***
Enable or disable 32-bit data transfer.
Options: Enabled (Default) / Disabled

### Hard Disk Write Protect

Disable or enable device write protection. This will be effective only if the device is accessed through BIOS.
Options: Disabled (Default) / Enabled

### IDE Detect Time Out (Sec)

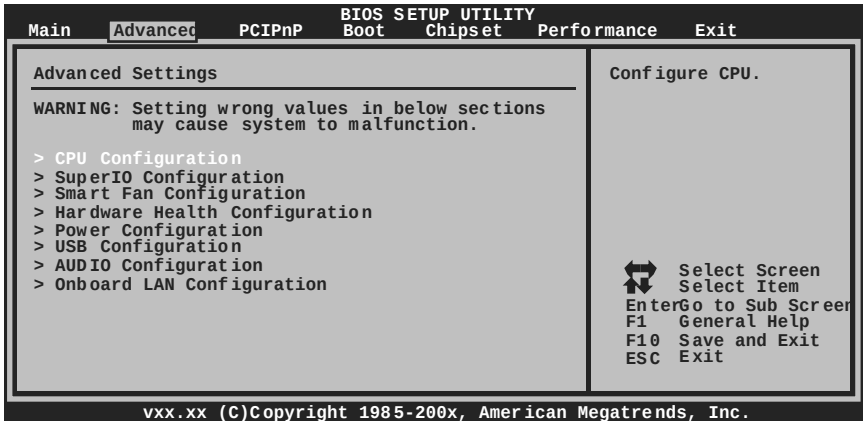
Select the time out value for detecting IDE/SATA devices.
Options: 35 (Default) / 30 / 25 / 20 / 15 / 10 / 5 / 0

# 2 Advanced Menu

The Advanced Menu allows you to configure the settings of CPU, Super I/O, Power Management, and other system devices.

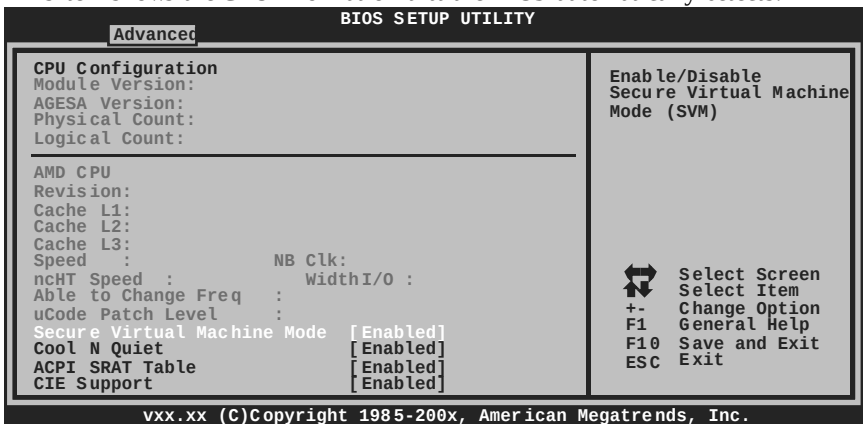
### Notice

- Beware of that setting inappropriate values in items of this menu may cause system to malfunction.




## CPU Configuration

This item shows the CPU information that the BIOS automatically detects.



### Secure Virtual Machine Mode

Virtualization Technology can virtually separate your system resource into several parts, thus enhance the performance when running virtual machines or multi interface systems.
Options: Enabled (Default) / Disabled

### Cool N Quiet

This item allows you to enable or disable the Cool & Quiet power saving technology.
Options: Enabled (Default) / Disabled

### ACPI SRAT Table

The operating system scans the ACPI SRAT at boot time and uses the information to better allocate memory and schedule software threads for maximum performance. This item controls whether the SRAT is made available to the operating system at boot up, or not.
Options: Enabled (Default) / Disabled

### C1E Support

This item allows you to configure the Enhanced Halt State (C1E) function, which may reduce the power consumption of your system when the system is idle.
Options: Disabled (Default) / Enabled

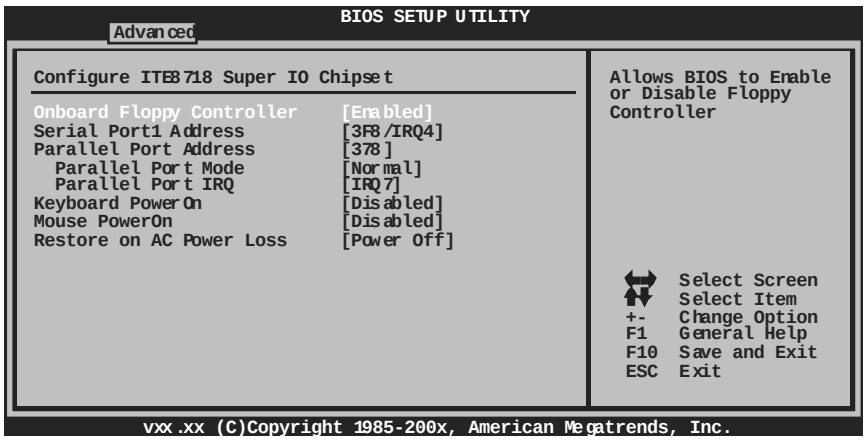
### Advanced Clock Calibration

Advanced Clock Calibration (ACC) is an enhanced technology for overclocking, needing support from both chipset and CPU. When enabled, it will improve the stability of advanced overclocking greatly.
Options: Disabled (Default) / Auto / All Cores / Per Core

### Core Leveling

This item allows you to activate Core Leveling function.
Options: Auto(Default) / Force Single Core / Force Dual Core / Force Tri Core / Enable all Cores

## SuperIO Configuration




### Onboard Floppy Controller

Select enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you installed another FDC or the system uses no floppy drive, select disabled in this field.
Options: Enabled (Default) / Disabled

### Serial Port1 Address

Select an address and corresponding interrupt for the first and second serial ports.
Options: 3F8/IRQ4 (Default) / 2F8/IRQ3 / 3E8/IRQ4 / 2E8/IRQ3 / Disabled

### Parallel Port Address

This item allows you to determine access onboard parallel port controller with which I/O Address.
Options: 378 (Default) / 278 / 3BC / Disabled

### Parallel Port Mode

This item allows you to determine how the parallel port should function.

| | | |
|---|---|---|
| Options: | Normal (Default) | Using Parallel port as Standard Printer Port. |
| | EPP | Using Parallel Port as Enhanced Parallel Port. |
| | ECP | Using Parallel port as Extended Capabilities Port. |
| | ECP+EPP | Using Parallel port as ECP & EPP mode. |

### ECP Mode DMA Channel

This item allows you to select parallel port ECP DMA.
Options: DMA3 (Default) / DMA0 / DMA1

### Parallel Port IRQ

This item allows you to select the IRQ for the onboard parallel port.
Options: IRQ7 (Default) / IRQ5 / Disabled

### Keyboard PowerOn

This item allows you to control the keyboard power on function.
Options: Disabled (Default) / Specific Key / Stroke Key / Any Key

### Specific Key Enter

This item will show only when Keyboard PowerOn is set "Specific Key."

### Stroke Keys Selected

This item will show only when Keyboard PowerOn is set "Stroke Key."
Options: Ctrl+F1 (Default) / Wake Key / Power Key / Ctrl+F2 / Ctrl+F3 / Ctrl +F4 / Ctrl+F5 / Ctrl+F6

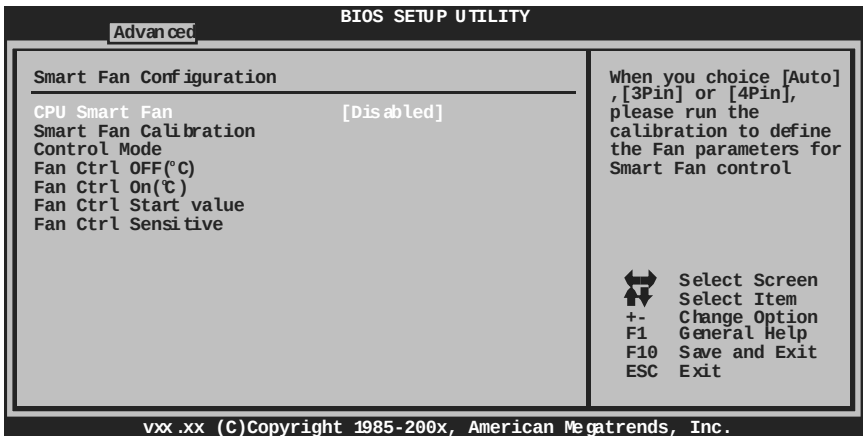
### Mouse PowerOn

This item allows you to control the mouse power on function.
Options: Disabled (Default) / Enabled

### Restore on AC Power Loss

This setting specifies how your system should behave after a power fail or interrupts occurs. By choosing Disabled will leave the computer in the power off state. Choosing Enabled will restore the system to the status before power failure or interrupt occurs.
Options: Power Off (Default) / Last State

## Smart Fan Configuration




### CPU Smart Fan

This item allows you to control the CPU Smart Fan function.
Options: Disabled (Default) / Auto / 4Pin / 3Pin

### Smart Fan Calibration

Choose this item and then the BIOS will auto test and detect the CPU/System fan functions and show CPU/System fan speed.

### Control Mode

This item provides several operation modes of the fan.
Options: Quiet / Performance / Manual

### Fan Ctrl OFF(℃)

If the CPU/System Temperature is lower than the set value, FAN will turn off.
Options: 0~127 (℃) (With the interval of 1℃)

### Fan Ctrl On(℃)

CPU/System fan starts to work under smart fan function when arrive this set value.
Options: 0~127 (℃) (With the interval of 1℃)

### Fan Ctrl Start Value

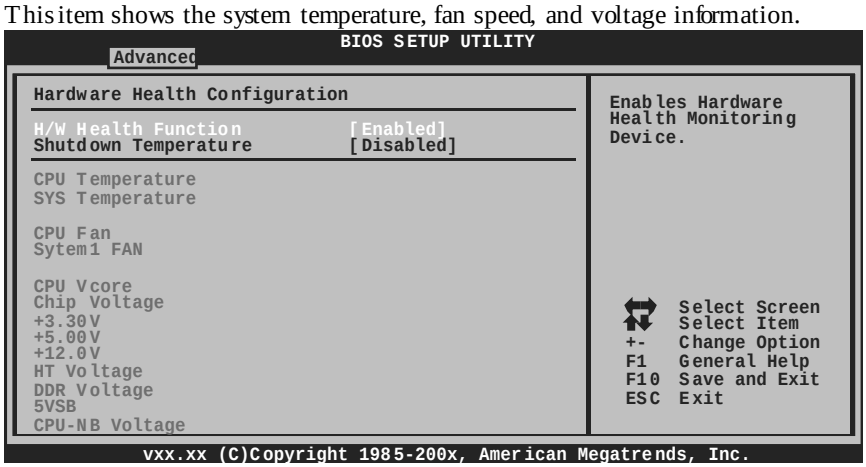
When CPU/System temperature arrives to the set value, the CPU/System fan will work under Smart Fan Function mode.
Options: 0~127 (With the interval of 1)

### Fan Ctrl Sensitive

Increasing the value will raise the speed of CPU/System fan.
Options: 1~127 (With the interval of 1)

## Hardware Health Configuration

This item shows the system temperature, fan speed, and voltage information.



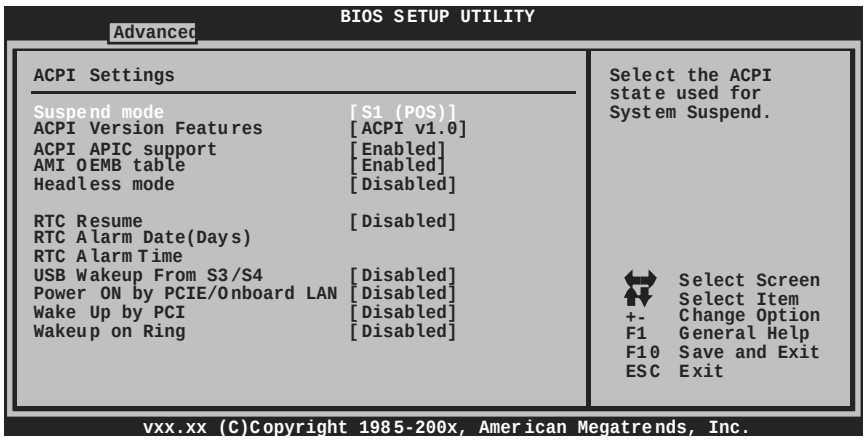

### H/W Health Function

If with a monitoring system, the system will show PC health status during POST stage.
Options: Enabled (Default) / Disabled

### Shutdown Temperature

This item allows you to set up the CPU shutdown Temperature. This item is only effective under Windows 98 ACPI mode.
Options: Disabled (Default) / 60℃/140℉ / 65℃/149℉ / 70℃/158℉ / 75℃/167℉ / 80℃/176℉ / 85℃/185℉ / 90℃/194℉

## Power Configuration




### Suspend mode

The item allows you to select the suspend type under the ACPI operating system.
Options: S1 (POS) (Default) Power on Suspend
S3 (STR) Suspend to RAM
S1 & S3 POS+STR

### ACPI Version Features

The item allows you to select the version of ACPI.
Options: ACPI v1.0 (Default) / ACPI v2.0 / ACPI v3.0

### ACPI APIC support

This item is used to enable or disable the motherboard's APIC (Advanced Programmable Interrupt Controller). The APIC provides multiprocessor support, more IRQs and faster interrupt handling.
Options: Enabled (Default) / Disabled

### AMI OEMB table

Set this value to allow the ACPI BIOS to add a pointer to an OEMB table in the Root System Description Table (RSDT) table.
Options: Enabled (Default) / Disabled

**Headless mode**

This is a server-specific feature. A headless server is one that operates without a keyboard, monitor or mouse. To run in headless mode, both BIOS and operating system (e.g. Windows Server 2003) must support headless operation.
Options: Disabled (Default) / Enabled

**RTC Resume**
When "Enabled", you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.
Options: Disabled (Default) / Enabled

**RTC Alarm Date (Days)**
You can choose which date the system will boot up.

**RTC Alarm Time**
You can choose the system boot up time, input hour, minute and second to specify.

**USB Wakeup from S3/S4**
This item allows you to enable or disabled the USB resume from S3/S4 function.
Options: Disabled (Default) / Enabled

**Power On by PCIE/Onboard LAN**
This item allows you control the wake on LAN (WOL) function.
Options: Disabled (Default) / Enabled

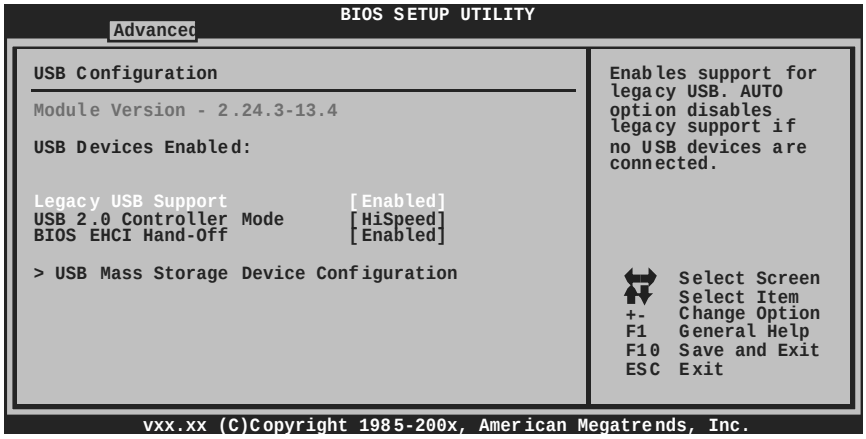
**Wake Up by PCI**
Enable / Disable PCI to generate a wake event.
Options: Disabled (Default) / Enabled

**Wakeup on Ring**

This item allows you control the wake on ring function.
Options: Disabled (Default) / Enabled

## USB Configuration

This item shows the USB controller and using USB device information.


BIOS SETUP UTILITY
Advanced
USB Configuration
Module Version - 2.24.3-13.4
USB Devices Enabled:
Legacy USB Support [Enabled]
USB 2.0 Controller Mode [HiSpeed]
BIOS EHCI Hand-Off [Enabled]
> USB Mass Storage Device Configuration
Enables support for legacy USB. AUTO option disables legacy support if no USB devices are connected.
Select Screen
Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
vxx.xx (C)Copyright 1985-200x, American Megatrends, Inc.

### Legacy USB Support

This item determines if the BIOS should provide legacy support for USB devices like the keyboard, mouse, and USB drive. This is a useful feature when using such USB devices with operating systems that do not natively support USB (e.g. Microsoft DOS or Windows NT).
Options: Enabled (Default) / Disabled

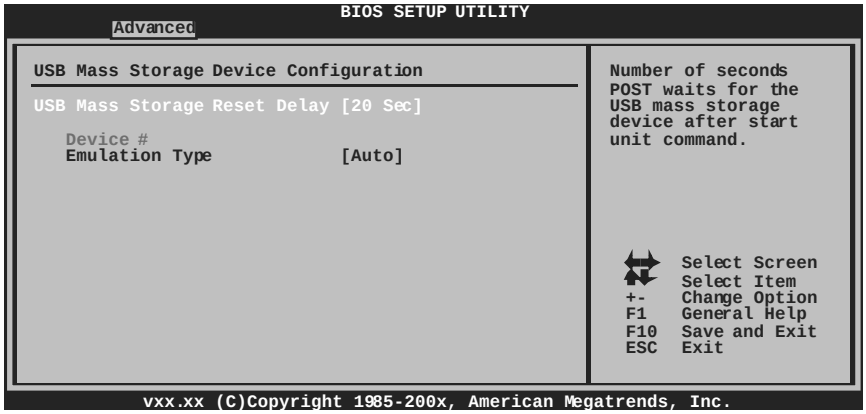
### USB 2.0 Controller Mode

This item allows you to select the operation mode of the USB 2.0 controller.
Options: HiSpeed (Default) USB 2.0-480Mbps
FullSpeed USB 1.1-12Mbps

### BIOS EHCI Hand-Off

This item allows you to enable support for operating systems without an EHCI hand-off feature.
Options: Enabled (Default) / Disabled

### USB Mass Storage Device Configuration


BIOS SETUP UTILITY
Advanced
USB Mass Storage Device Configuration
USB Mass Storage Reset Delay [20 Sec]
Device #
Emulation Type [Auto]
Number of seconds POST waits for the USB mass storage device after start unit command.
Select Screen
Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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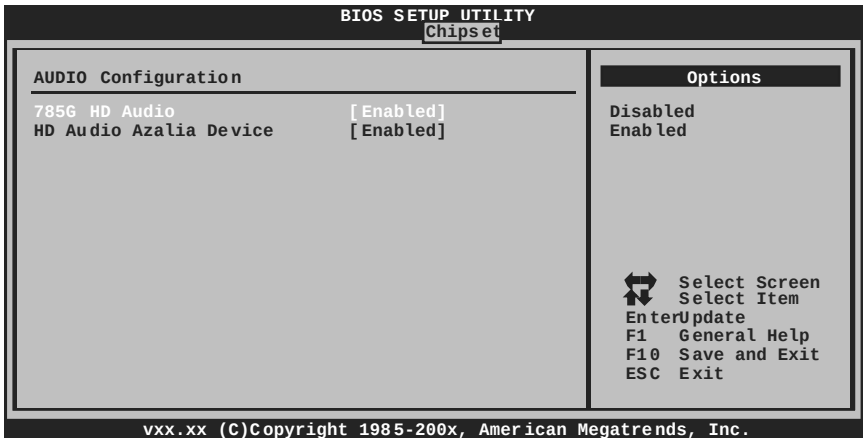
***USB Mass Storage Reset Delay***
This item allows you to set the reset delay for USB mass storage device.
Options: 20 Sec (Default) / 10 Sec / 30 Sec / 40 Sec

***Emulation Type***
This item allows you to select the emulation type of the USB mass storage device.
Options: Auto (Default) / Floppy / Forced FDD / Hard Disk / CDROM

## AUDIO Configuration



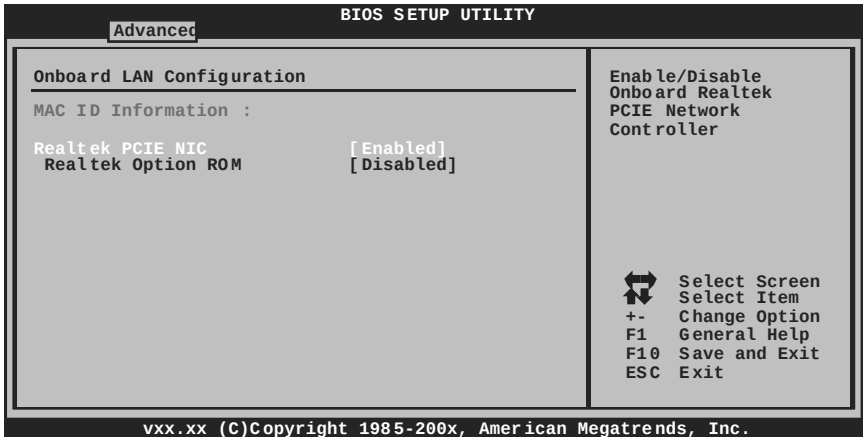
### 785G HD Audio

This item allows you to control 785G HD audio function.
Options: Enabled (Default) / Disabled

### HD Audio Azalia Device

This item allows you to control the HD audio device.
Options: Enabled (Default) / Auto / Disabled

## Onboard LAN Configuration




### MAC ID Information

This area shows the MAC ID.

### Realtek PCIE NIC

This option allows you to control the onboard LAN controller.
Options: Enable (Default) / Disable

### Realtek Option ROM

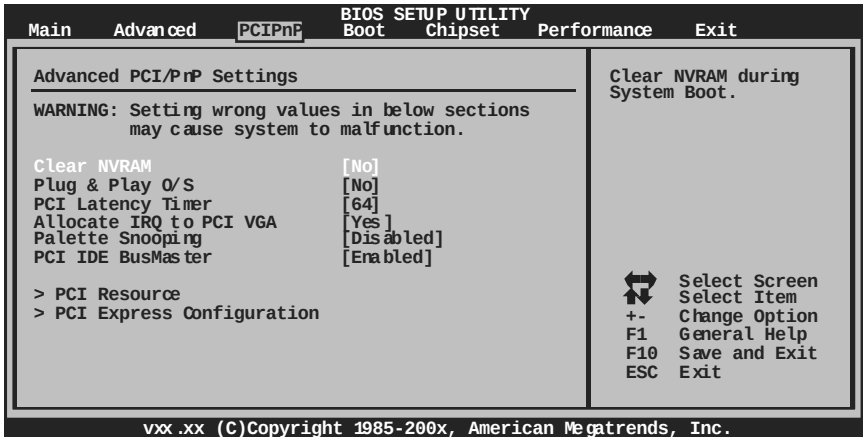
This item allows you to enable or disable the Onboard LAN Boot ROM.
Options: Disabled (Default) / Enabled

# 3 PCIPnP Menu

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components.

### Notice

- Beware of that setting inappropriate values in items of this menu may cause system to malfunction.


BIOS SETUP UTILITY
Main Advanced PCIPnP Boot Chipset Performance Exit
Advanced PCI/PnP Settings
WARNING: Setting wrong values in below sections may cause system to malfunction.
Clear NVRAM [No]
Plug & Play O/S [No]
PCI Latency Timer [64]
Allocate IRQ to PCI VGA [Yes]
Palette Snooping [Disabled]
PCI IDE BusMaster [Enabled]
> PCI Resource
> PCI Express Configuration
Clear NVRAM during System Boot.
Select Screen
Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
vxx.xx (C)Copyright 1985-200x, American Megatrends, Inc.

## Clear NVRAM

This item allows you to clear the data in the NVRAM (CMOS) by selecting "Yes".
Options: No (Default) / Yes

## Plug & Play OS

When set to YES, BIOS will only initialize the PnP cards used for the boot sequence (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Window™ 95. When set to NO, BIOS will initialize all the PnP cards. For non-PnP operating systems (DOS, Netware™), this option must set to NO.
Options: No (Default) / Yes

## PCI Latency Timer

This item controls how long a PCI device can hold the PCI bus before another takes over. The longer the latency, the longer the PCI device can retain control of the bus before handing it over to another PCI device.
Options: 64 (Default) / 0-255

## Allocate IRQ to PCI VGA

This item allows BIOS to choose a IRQ to assign for the PCI VGA card.
Options: Yes (Default) / No

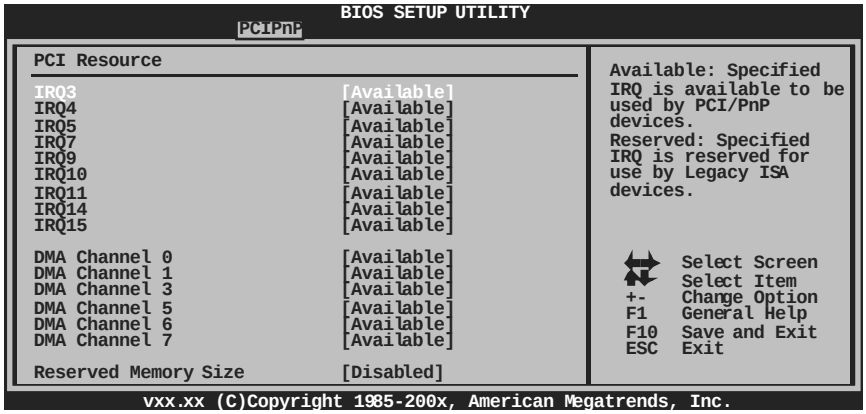
## Palette Snooping

Some old graphic controllers need to "snoop" on the VGA palette and then map it to their display as a way to provide boot information and VGA compatibility. This item allows such snooping to take place.
Options: Disabled (Default) / Enabled

## PCI IDE BusMaster

This item is a toggle for the built-in driver that allows the onboard IDE controller to perform DMA (Direct Memory Access) transfers.
Options: Enabled (Default) / Disabled

## PCI Resource



### IRQ3/4/5/7/9/10/11/14/15

These items will allow you to assign each system interrupt a type, depending on the type of device using the interrupt. The option "Available" means the IRQ is going to assign automatically.
Options: Available (Default) / Reserved

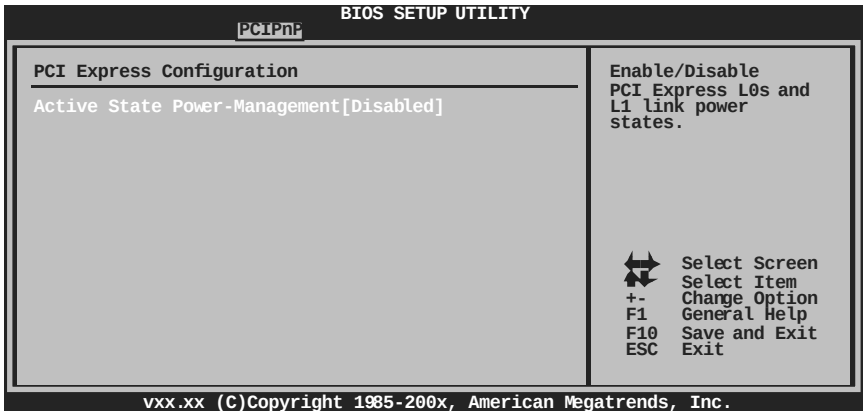
### DMA Channel 0/1/3/5/6/7

These items will allow you to assign each DMA channel a type, depending on the type of device using the channel. The option "Available" means the channel is going to assign automatically.
Options: Available (Default) / Reserved

### Reserved Memory Size

This item allows BIOS to reserve certain memory size for specific PCI device.
Options: Disabled (Default) / 16K / 32K / 64K

## PCI Express Configuration

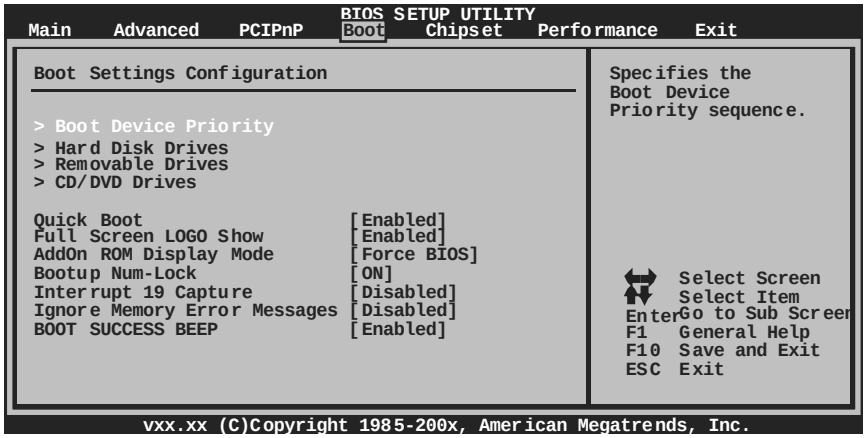



### Active State Power-Management

This item sets the ASPM configuration for the PCI Express devices before the operating system boots. This function is for OS which does not support ASPM.
Options: Disabled (Default) / Enabled

# 4 Boot Menu

This menu allows you to setup the system boot options.


BIOS SETUP UTILITY
Main Advanced PCIPnP Boot Chipset Performance Exit
Boot Settings Configuration
> Boot Device Priority
> Hard Disk Drives
> Removable Drives
> CD/DVD Drives
Quick Boot [Enabled]
Full Screen LOGO Show [Enabled]
AddOn ROM Display Mode [Force BIOS]
Bootup Num-Lock [ON]
Interrupt 19 Capture [Disabled]
Ignore Memory Error Messages [Disabled]
BOOT SUCCESS BEEP [Enabled]
Specifies the Boot Device Priority sequence.
Select Screen
Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit
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## Boot Device Priority

Items in this sub-menu specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

Options: Removable / Hard Disk / CDROM / Legacy LAN / Disabled

## Hard Disk Drives

The BIOS will attempt to arrange the hard disk boot sequence automatically. You can also change the booting sequence. The number of device items that appears on the screen depends on the number of devices installed in the system.

Options: Pri. Master / Pri. Slave / Sec. Master / Sec. Slave / USB HDD0 / USB HDD1 / USB HDD2 / Bootable Add-in Cards

## Removable Drives

The BIOS will attempt to arrange the removable drive boot sequence automatically. You can also change the booting sequence. The number of device items that appears on the screen depends on the number of devices installed in the system.

Options: Floppy Disks / Zip100 / USB-FDD0 / USB-FDD1 / USB-ZIP0 / USB-ZIP1 / LS120

## CD/DVD Drives

The BIOS will attempt to arrange the CD/DVD drive boot sequence automatically. You can also change the booting sequence. The number of device items that appears on the screen depends on the number of devices installed in the system.
Options: Pri. Master / Pri. Slave / Sec. Master / Sec. Slave / USB CDROM0 / USB CDROM 1

## Quick Boot

Enabling this option will cause an abridged version of the Power On Self-Test (POST) to execute after you power up the computer.
Options: Enabled (Default) / Disabled

## Full Screen LOGO Show

This item allows you to enable/disable Full Screen LOGO Show function.
Options: Enabled (Default) / Disabled

## AddOn ROM Display Mode

This item sets the display mode for option ROM.
Options: Force BIOS (Default) / Keep Current

## Bootup Num-Lock

Selects the NumLock State after the system switched on.
Options: ON (Default) / OFF

## Interrupt 19 Capture

When set to Enabled, this item allows the option ROMs to trap interrupt 19.
Options: Disabled (Default) / Enabled

## Ignore Memory Error Messages

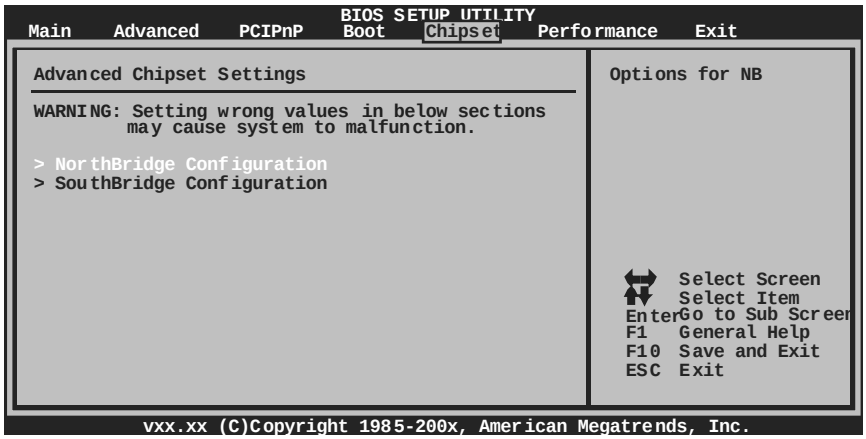
When set to Enabled, the POST will ignore memory error messages.
Options: Disabled (Default) / Enabled

## BOOT SUCCESS BEEP

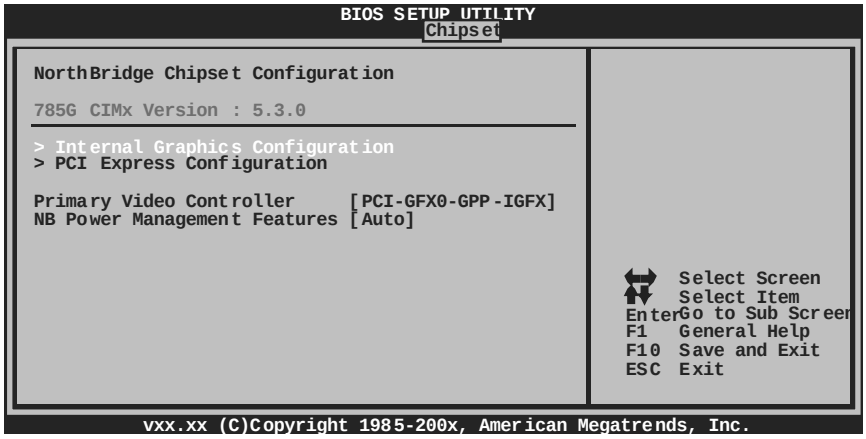
When this item is set to Enabled, BIOS will let user know boot success with beep.
Options: Enabled (Default) / Disabled

# 5 Chipset Menu

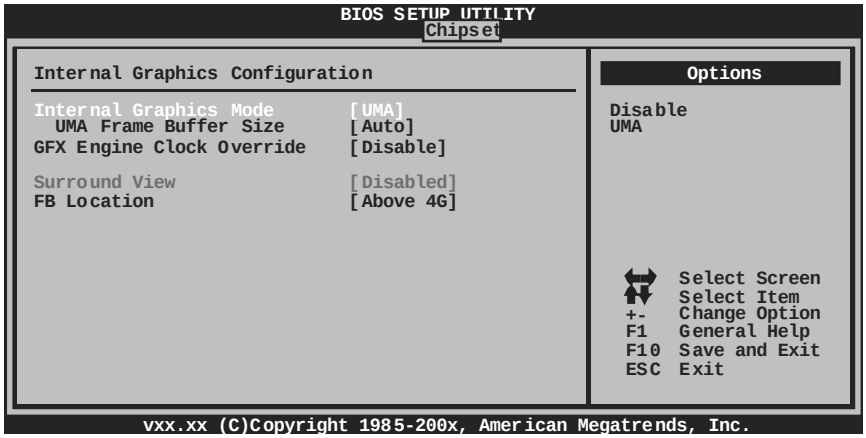
This submenu allows you to configure the specific features of the chipset installed on your system. This chipset manage bus speeds and access to system memory resources, such as DRAM. It also coordinates communications with the PCI bus.




## NorthBridge Configuration



### Internal Graphics Configuration




***Internal Graphics Mode***
This item allows you to select the memory mode used for internal graphics device.
Options: UMA (Default) / Disable

***UMA Frame Buffer Size***
This item allows you to choose the UMA frame buffer size for internal graphics.
Options: Auto (Default) / 32MB / 64MB / 128MB / 256MB / 512MB

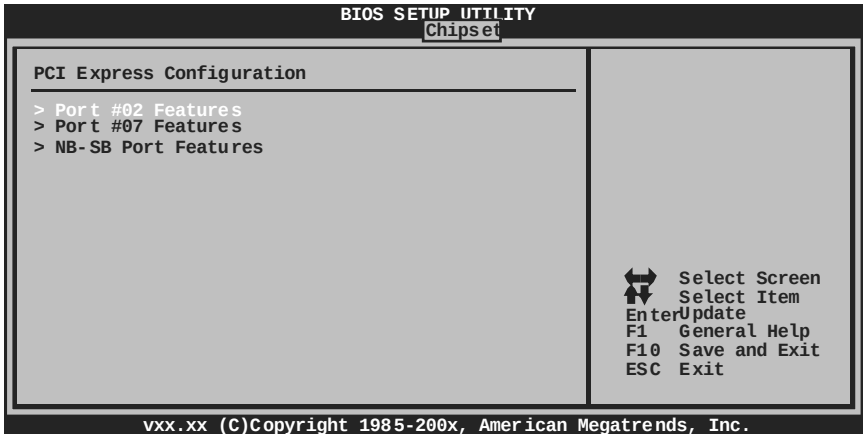
***GFX Engine Clock Override***
This item allows you to control the internal GFX engine clock override function.
Options: Disabled (Default) / Enabled

***GFX Engine Clock***
This item allows you to set the internal GFX engine clock.
Options: 500 (Default) / Min: 150, Max: 1200

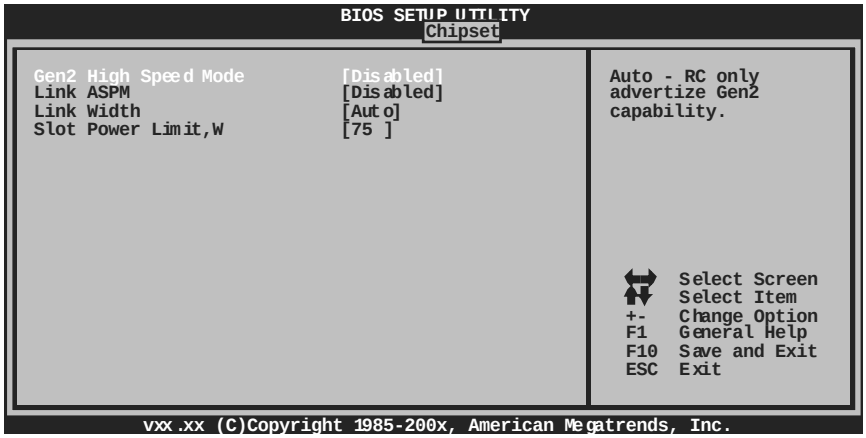
***Surround View***
This item allows you to control the Surround View Function.
Options: Disabled / Enabled / Auto (Default)

***FB Location***
This item allows you to set the FB-DIMM location.
Options: Above 4G (Default) / Under 4G

### PCI Express Configuration




***Port #02/07 Features***



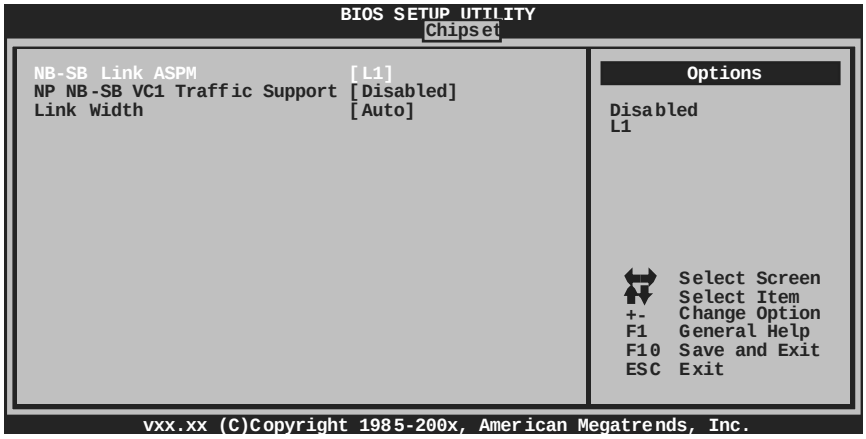

***Gen2 High Speed Mode***
Options: Disabled (Default) / Auto

***Link ASPM***
Options: Disabled (Default) / L0s / L1 / L0x & L1

***Link Width (Only for Port #02)***
Options: Auto (Default) / x1 / x2 / x4 / x8 / x16

***Slot Power Limit, W (Only for Port #02)***
Options: 75 (Default) / 0-255

***NB-SB Port Features***




***NB-SB Link ASPM***
Options: L1(Default) / Disabled

***NP NB-SB VC1 Traffic Support***
Options: Disabled (Default) / Enabled

***Link Width***
Options: Auto (Default) / x1 / x2 / x4

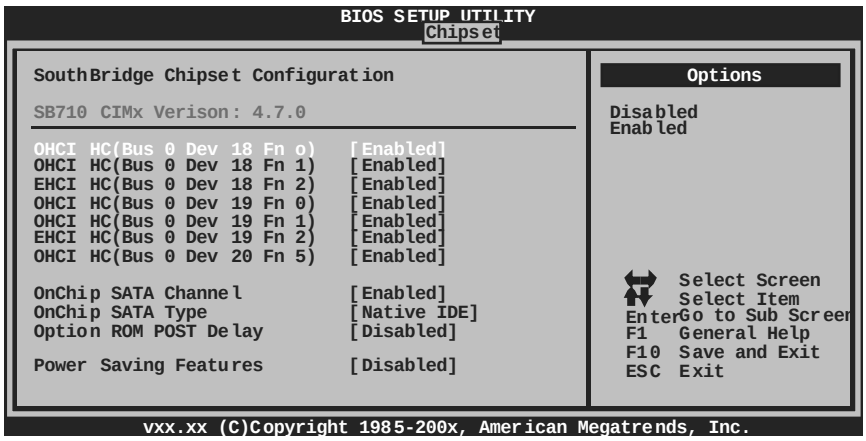
### Primary Video Controller

This option allows you to select the video controller in charge.
Options: PCI-GFX0-GPP-IGFX (Default) / GFX0-GPP-IGFX-PCI / GPP-GFX0-IGFX-PCI / IGFX-GFX0-GPP-PCI

### NB Power Management Features

This option controls the NB power management function.
Options: Auto (Default) / Disabled

## SouthBridge Configuration


BIOS SETUP UTILITY
Chipset
SouthBridge Chipset Configuration
SB710 CIMx Verison: 4.7.0
OHCI HC(Bus 0 Dev 18 Fn 0) [Enabled]
OHCI HC(Bus 0 Dev 18 Fn 1) [Enabled]
EHCI HC(Bus 0 Dev 18 Fn 2) [Enabled]
OHCI HC(Bus 0 Dev 19 Fn 0) [Enabled]
OHCI HC(Bus 0 Dev 19 Fn 1) [Enabled]
EHCI HC(Bus 0 Dev 19 Fn 2) [Enabled]
OHCI HC(Bus 0 Dev 20 Fn 5) [Enabled]
OnChip SATA Channel [Enabled]
OnChip SATA Type [Native IDE]
Option ROM POST Delay [Disabled]
Power Saving Features [Disabled]
Options
Disabled
Enabled
Select Screen
Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit
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### OHCI HC(Bus 0 Dev 18/19/20 Fn 0/1/5)

This item allows you to control OHCI host controller. (USB 1.1 Device)
Options: Enabled (Default) / Disabled

### EHCI HC(Bus 0 Dev 18/19 Fn 2)

This item allows you to control EHCI host controller. (USB 2.0 Device)
Options: Enabled (Default) / Disabled

### OnChip SATA Channel

This option allows you to enable the on-chip Serial ATA.
Options: Enabled (Default) / Disabled

### OnChip SATA Type

This option allows you to select the on-chip Serial ATA operation mode.
Options: Native IDE (Default) / RAID / AHCI / Legacy IDE / IDE→AHCI

### Option ROM POST Delay

Options: Disabled (Default) / 1 Second / 2 ~ 7 Seconds

### SATA IDE Combined Mode

This option controls the SATA/PATA combined mode.
Options: Enabled (Default) / Disabled

### Power Saving Features

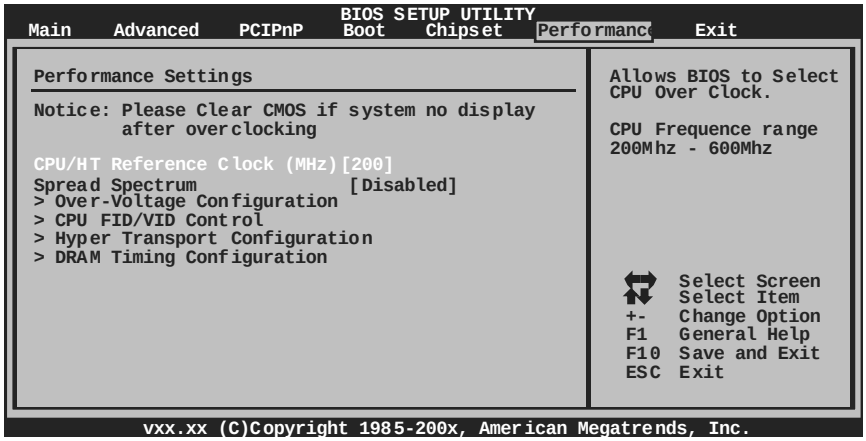
This item allows you to enable or disable power saving features in SB. As general rule, this feature should be disabled for desktop and enabled for mobile. See AMD SB710 Power Saving document for more details.
Options: Disabled (Default) / Enabled

# 6 Performance Menu

This submenu allows you to change voltage and clock of various devices.
(However, we suggest you use the default setting. Changing the voltage and clock improperly may damage the device.)

### Notice

- Beware of that setting inappropriate values in items of this menu may cause system to malfunction.


BIOS SETUP UTILITY
Main Advanced PCIPnP Boot Chipset Performance Exit
Performance Settings
Notice: Please Clear CMOS if system no display after overclocking
CPU/HT Reference Clock (MHz) [200]
Spread Spectrum [Disabled]
> Over-Voltage Configuration
> CPU FID/VID Control
> Hyper Transport Configuration
> DRAM Timing Configuration
Allows BIOS to Select CPU Over Clock.
CPU Frequence range 200Mhz - 600Mhz
Select Screen
Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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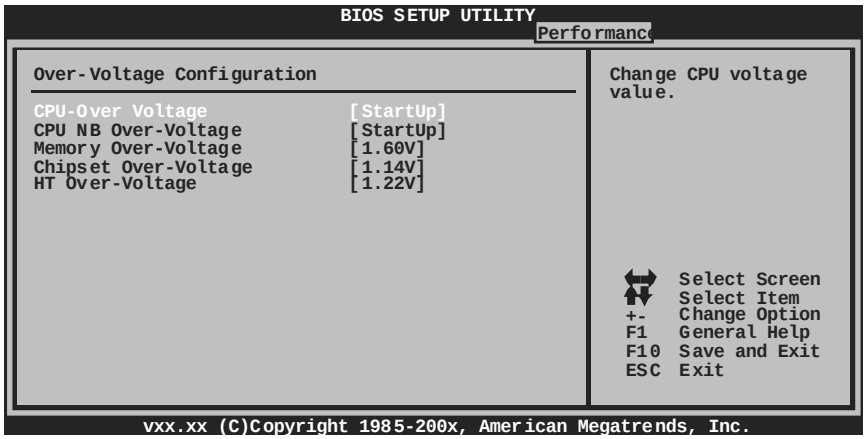
## CPU/HT Reference Clock (MHz)

This item allows BIOS to select CPU Over Clock.
Options: 200 (Default) / 200~600

## Spread Spectrum

This item allows you to control Spread Spectrum function.
Options: Disabled (Default) / Enabled

## Over-Voltage Configuration




**CPU Over Voltage**
This item allows you to select CPU Voltage Control.
Options: StartUp (Default) / +0.10V / +0.20V / +0.30V

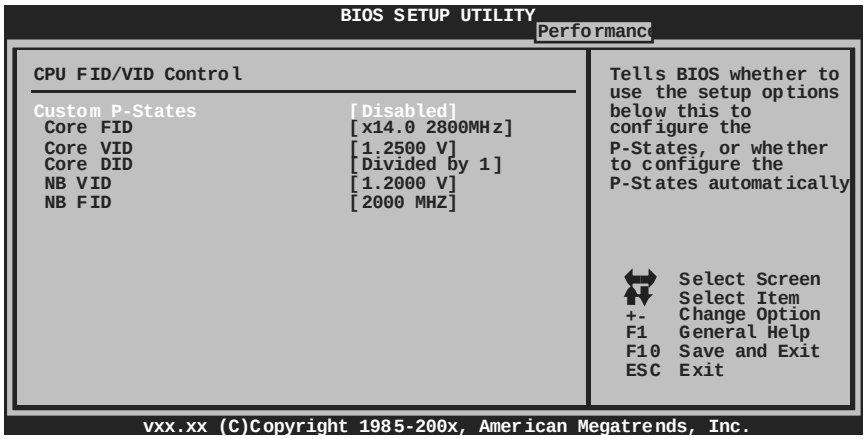
**CPU NB Over-Voltage**
This item allows you to select CPU NB Voltage Control.
Options: StartUp (Default) / +0.10V / +0.20V / +0.30V

**Memory Over-Voltage**
This item allows you to select Memory Voltage Control.
Options: 1.60V (Default) / 1.50V / 1.55V / 1.65V /1.70V / 1.75V/ 1.80V / 1.85V

**Chipset Over-Voltage**
This item allows you to select Chipset Voltage Control.
Options: 1.14V (Default) / 1.18V / 1.23V / 1.27V

**HT Over-Voltage**
This item allows you to select HT Voltage Control.
Options: 1.22V (Default) / 1.27V / 1.32V / 1.37V

## CPU FID/VID Control


BIOS SETUP UTILITY
Performance
CPU FID/VID Control
Custom P-States [Disabled]
Core FID [x14.0 2800MHz]
Core VID [1.2500 V]
Core DID [Divided by 1]
NB VID [1.2000 V]
NB FID [2000 MHZ]
Tells BIOS whether to use the setup options below this to configure the P-States, or whether to configure the P-States automatically
Select Screen
Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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### Custom P-States

This item allows you to select the P-States controlling.
Options: Disabled (Default) / Enabled

### Core FID

This item allows you to select the Ratio/Frequency of AM3 CPU.
Options: x8.0 1600MHz ~ x31.5 6300MHz

### Core VID

This function allows you to adjust the voltage of AM3 CPU.
Options: 0.0125V ~ 1.5500V

### Core DID

This is the Core Divider.
Options: Divided by 1 (Default) / Divided by 2 / Divided by 4 / Divided by 8 / Divided by 16

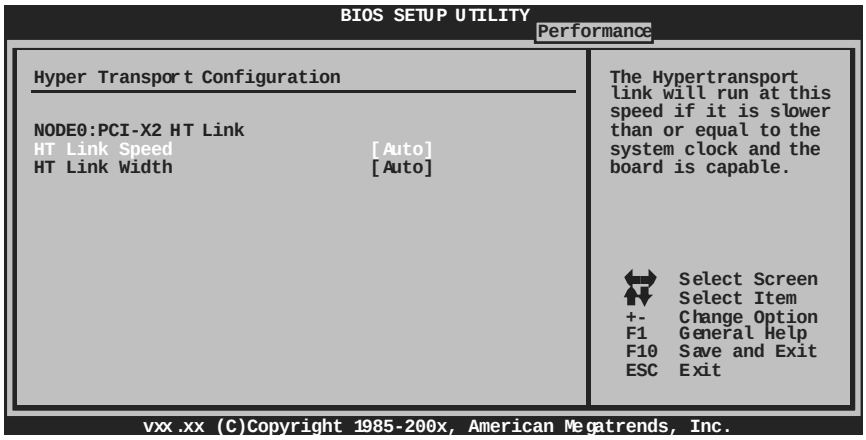
### NB VID

This function allows you to adjust the voltage of NB chip.
Options: 0.0125V ~ 1.5500V

### NB FID

This item allows you to select the Frequency of NB chip.
Options: 800MHz ~ 7000MHz (Differed by CPU)

## Hyper Transport Configuration


BIOS SETUP UTILITY
Performance
Hyper Transport Configuration
NODE0:PCI-X2 HT Link
HT Link Speed [Auto]
HT Link Width [Auto]
The Hypertransport link will run at this speed if it is slower than or equal to the system clock and the board is capable.
Select Screen
Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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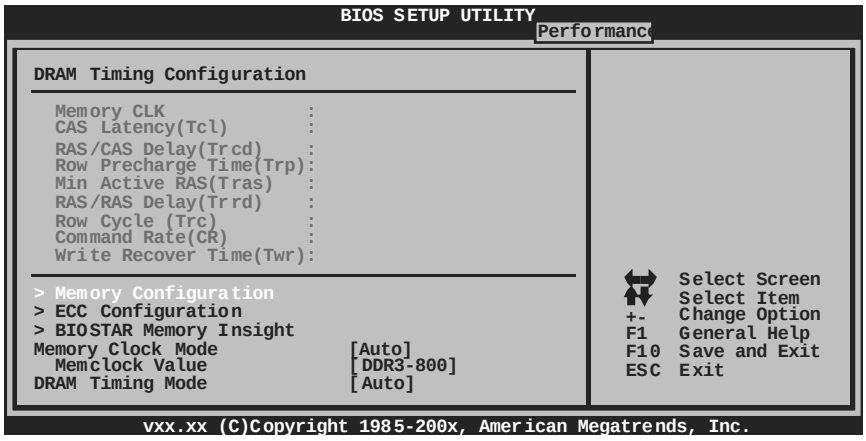
### HT Link Speed

Options: Auto (Default) / 200MHz / 400MHz / 600MHz / 800MHz / 1GHz / 1.2GHz / 1.4GHz / 1.6GHz / 1.8GHz / 2.0GHz / 2.2GHz / 2.4GHz / 2.6GHz

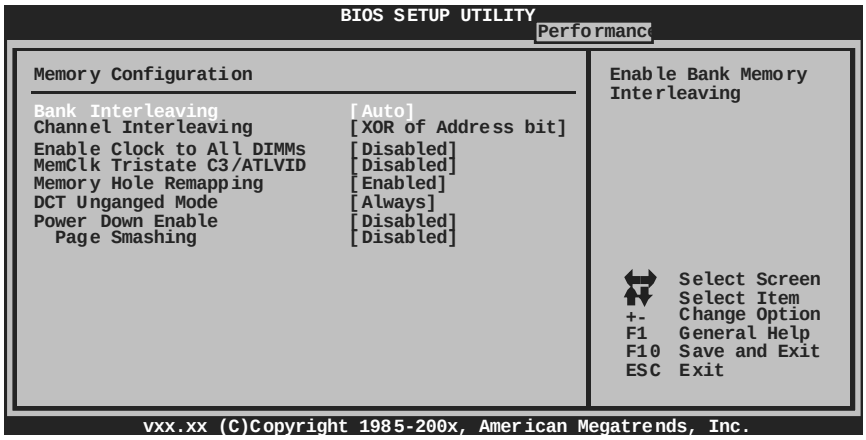
### HT Link Width

Options: Auto (Default) / 8 Bit / 16 Bit

## DRAM Timing Configuration




### Memory Configuration




***Bank Interleaving***

Bank Interleaving is an advanced chipset technique used to improve memory performance. Memory interleaving increases bandwidth by allowing simultaneous access to more than one piece of memory.

Options: Auto (Default)

***Channel Interleaving***

This item allows you to control the DDR2 dual-channel function.

Options: XOR of Address bits [20:16, 6] (Default) / XOR of Address bits [20:16, 9] / Address bits 6 / Address bits 12 / Disabled

***Enable Clock to All DIMMs***

This item determines whether the BIOS should actively reduce EMI (Electromagnetic Interference) and reduce power consumption by turning off unoccupied or inactive DIMM slots.

Options: Disabled (Default) / Enabled

***MemClk Tristate C3/ATLVID***

This item enables or disables the MemClk Tristate function in C3 Mode.

Options: Disabled (Default) / Enabled

***Memory Hole Remapping***

This item allows you to enable or disable the remapping of the overlapped PCI memory above the total physical memory. Only 64-bit OS supports this function.

Options: Enabled (Default) / Disabled

***DCT Unganged Mode***

This item controls the DRAM controller ganged (128bit*1) / unganged (64bit*2) dual-channel operation mode. If two DRAM modules with different size are installed, using unganged mode can still make it run in dual-channel operation.

Options: Always (Default) / Auto

***Power Down Enable***

This item controls the DRAM power down function.

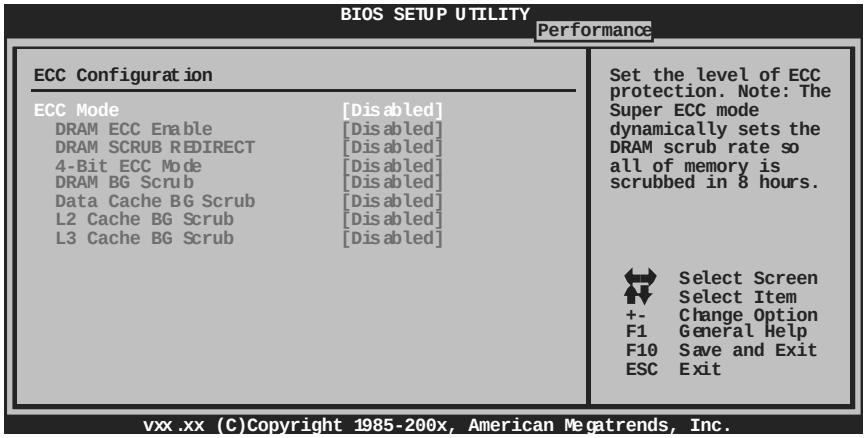
Options: Enabled (Default) / Disabled

***Page Smashing***

This item is S/W Control of Page Smashing Mechanism.

Options: Disabled (Default) / IC / DC / Both

## ECC Configuration


BIOS SETUP UTILITY
Performance
ECC Configuration
ECC Mode [Disabled]
DRAM ECC Enable [Disabled]
DRAM SCRUB REDIRECT [Disabled]
4-Bit ECC Mode [Disabled]
DRAM BG Scrub [Disabled]
Data Cache BG Scrub [Disabled]
L2 Cache BG Scrub [Disabled]
L3 Cache BG Scrub [Disabled]
Set the level of ECC protection. Note: The Super ECC mode dynamically sets the DRAM scrub rate so all of memory is scrubbed in 8 hours.
Select Screen
Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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***ECC Mode***

This item allows you to select the DRAM ECC Mode.
Options: Disabled (Default) / Basic / Good / Super / Max / User

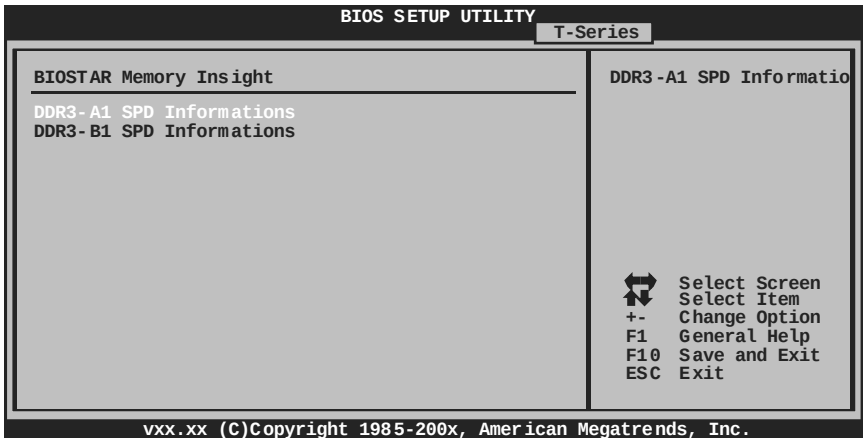
***DRAM ECC Enabled***
Options: Disabled (Default) / Enabled

***DRAM Scrub Redirect***
Options: Disabled (Default) / Enabled

***4-bit ECC Mode***
Options: Disabled (Default) / Enabled

***DRAM BG Scrub/Data Cache BG Scrub/L2 Cache BG Scrub/L3 Cache BG Scrub***
Options: Disabled (Default) / 40ns / 80ns / 160ns / 320ns / 640ns / 1.28us / 2.56us / 5.12us / 10.2us / 20.5us / 41.0us / 81.9us / 163.8us / 327.7us / 655.4us / 1.31ms / 2.62ms / 5.24ms / 10.49ms / 20.97ms / 42.00ms / 84.00ms

### BIOSTAR Memory Insight




***DDR3-A1/B1 SPD Informations***
These items display SPD information of DDR3 memory.

### Memory Clock Mode

This item allows you to control the Memory Clock.
Options: Auto (Default) / Limit / Manual

### Memclock Value

This item allows you to set the Memory Clock.
Options: DDR3-800 (Default) / DDR3-1066 / DDR3-1333 / DDR3-1600 / Auto

### DRAM Timing Mode

This item allows you to choose to manually or automatically regulate the DRAM Timing.
Options: Auto (Default) / DCT0 / DCT1 / Both

### CAS Latency (CL)

Options: Auto (Default) / 4~12 CLK

### 2T Command

Options: Auto (Default) / 1T / 2T

**TRCD**
Options: Auto (Default) / 5~12 CLK

**TRP**
Options: Auto (Default) / 5~12 CLK

**tRTP**
Options: Auto (Default) / 4~7 CLK

**TRAS**
Options: Auto (Default) / 15~30 CLK

**TRC**
Options: Auto (Default) / 11~42 CLK

**tWR**
Options: Auto (Default) / 5~8 / 10 / 12 CLK

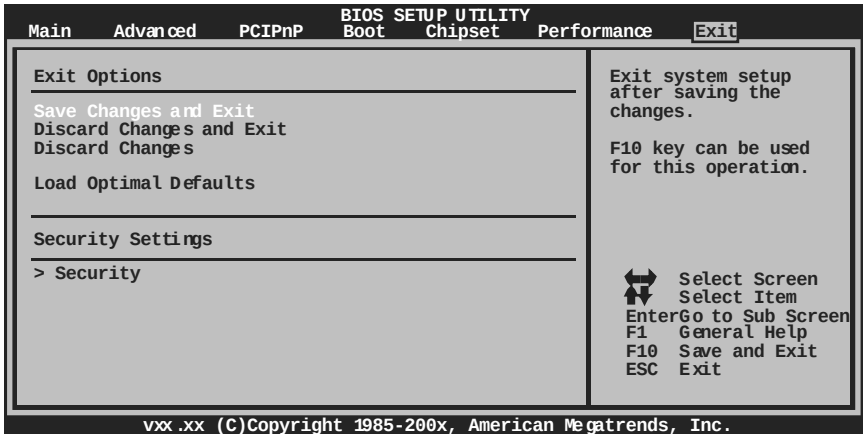
**TRRD**
Options: Auto (Default) / 4~7 CLK

**tWTR**
Options: Auto (Default) / 4~7 CLK

**tRFC0 / tRFC1 / tRFC2 / tRFC3**
Options: Auto (Default) / 90ns / 110ns / 160ns / 300ns / 350ns

# 7 Exit Menu

This menu allows you to load the optimal default settings, and save or discard the changes to the BIOS items.




## Save Changes and Exit

Save all configuration changes to CMOS RAM and exit setup.

## Discard Changes and Exit

Abandon all changes made during the current session and exit setup.

## Discard Changes

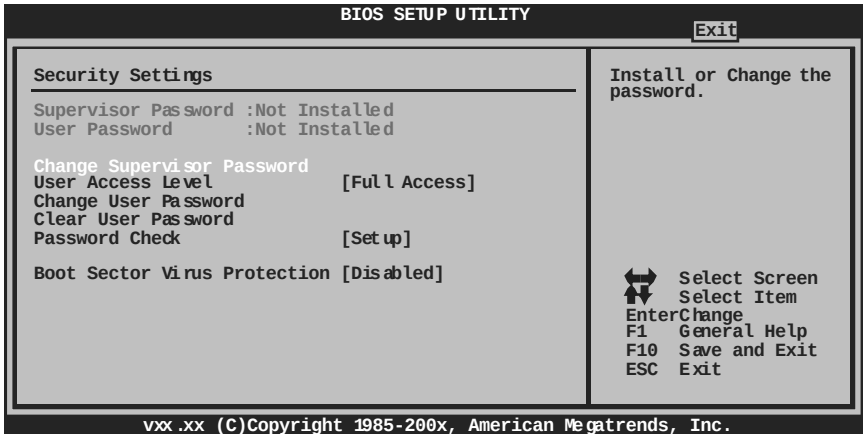
Abandon all changes made during the current session and restore the previously saved values.

## Load Optimal Defaults

This selection allows you to reload the BIOS when problem occurs during system booting sequence. These configurations are factory settings optimized for this system.

## Security

This sub-menu allows you to provide/revise supervisor and user password.




### Change Supervisor Password

Setting the supervisor password will prohibit everyone except the supervisor from making changes using the CMOS Setup Utility. You will be prompted with to enter a password.

### User Access Level

This item allows supervisor to set the user level.
Options: Full Access (Default) / No Access / View Only / Limited

### Change User Password

If the Supervisor Password is not set, then the User Password will function in the same way as the Supervisor Password. If the Supervisor Password is set and the User Password is set, the "User" will only be able to view configurations but will not be able to change them.

### Clear User Password

This item is for clearing user password.

**Password Check**
This item is for setting the timing that checking password.
Options: Setup (Default) / Always

**Boot Sector Virus Protection**
This option allows you to choose the VIRUS Warning feature that is used to protect the IDE Hard Disk boot sector. If this function is enabled and an attempt is made to write to the boot sector, BIOS will display a warning message on the screen and sound an alarm beep.
Options: Disabled (Default) / Enabled